

Missouri

Office of Geospatial Information

Plan

Version 3.0



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Office of Administration
Information Technology Services Division
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Office of Geospatial Information Plan

Document History

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1.0	June 2009	First Adoption	Geographic Information Officer
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3.0	November 2011	Remove references to GIO.	Director-GIS

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Introduction

The State of Missouri employs a full-time Director-GIS as the point of contact for statewide communication, coordination, development, and implementation of the Missouri Spatial Data Infrastructure and Missouri's Geospatial Strategic Plans. There is no doubt that delivering GIS services in a coordinated fashion will improve critical services to state agencies and citizens at an overall lower cost. The State of Missouri will benefit from this coordination of geospatial elements through sharing infrastructure (hardware and software), resources (people and finances), and processes (services and applications) across state agencies and out to the public.

It seems fitting that while the IT computing environment has undergone a transformation to a more consolidated enterprise system, GIS data and resources must now move toward consolidation as well. The MDNR, MoDOT, DHSS, and MDC have built significant GIS infrastructure for mandated program use during the last twenty years. These systems and experiences must be maintained, supported, and leveraged for the State to grow to meet the upcoming needs for data interoperability, transparency, and reporting. More recently there are a number of agencies, namely SEMA, MSHP, and DED who are building their own GIS capabilities and capacities that would be able to leverage and catalyze their respective growth and implementations if enterprise GIS data and services are created.

Beyond the above agencies, other agencies such as DOR, DOA, DSS, DMH, and DESE have an interest in using GIS to support their business mandates. These agencies could significantly benefit from the development of an Office of Geospatial Information that can support these agencies by providing services through not only human resources, but also data administration, analysis, and any supporting infrastructure.

Further, it would be mutually beneficial to all agencies to build common GIS service offerings, create branding for State of Missouri web mapping, develop data distribution and management policies and standards, and collaboratively work with local and federal entities to more effectively develop, manage, and maintain GIS information within and for the State of Missouri.

Office of Geospatial Information (OGI) Goals:

- Create a single informational portal on the web that represents all things geospatial in the State of Missouri.
- Position the OGI to focus on stakeholder business services, process improvement, and best practices.
- Plan for the evolution of and migration to a new enterprise services structure, while insuring that critical business needs are met and stewardship and maintenance are maintained.
- Develop an agile Enterprise GIS – with mechanisms that facilitate rapid resource deployment and with the ability to manage change.
- Support the development of a common GIS infrastructure for the state – SDE Database, ESRI licensing, Image Services, Metadata, etc.
- Develop and catalog best practices to bear for associated partners – policies, procedures, standards and guidelines for GIS technical, application, data, and security architectures.

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- Provide data and image services that deliver quality, efficient, relevant, and effective GIS solutions for all citizens and agencies of the State.

To achieve these goals, we must perceive geospatial information as an enterprise-wide infrastructure asset and work to establish a sustainable funding mechanism for the OGI and its programs.

Purpose

The OGI shall provide coordination, guidance, and leadership, and plan the implementation of Missouri's statewide geospatial information technology. The office shall identify, coordinate, and guide strategic investments in geospatial information technology, data, and service systems to ensure effective implementation and use of geospatial information by state government, local government, and the public as an enterprise resource to maximize benefits for Missourians.

Having a strong geospatial infrastructure and enterprise GIS capabilities are important for a number of reasons, not the least of which is improving the decision making process. For example, optimal customer services require that customers and staff have statewide access to services and information that is comprehensive, accurate, and consistent. Similarly, planning for and responding to emergencies is drastically improved with timely and correct information that is in a format that can be readily accessed by both internal and external agencies. Solutions to challenges such as these require both geospatial infrastructure (data and technology tools) and standard processes that support services, policy and decision-making.

Creation of an enterprise GIS program provides a model for sharing. The OGI will facilitate the coordination of previously disconnected efforts at the state and local levels to provide data sharing, standardization, and collaboration to improve the overall GIS landscape in the State of Missouri. This coordination will better situate Missouri for emergency preparedness, economic competitiveness, public health delivery, environmental management, educational opportunities, and efficient delivery of services to the public.

Vision Statement

The Office of Geospatial Information will provide effective geospatial resources to state agencies, local governments, and other stakeholders to benefit and serve the citizens, the environment, and the economy of Missouri.

Duties

The Office of Geospatial Information shall:

- (1) provide leadership and outreach, to ensure cooperation and coordination for all geospatial functions in state and local government, including coordination between state agencies, inter-government coordination between the state and local government, and extra-government coordination, which includes coordination with academic as well as private and nonprofit sector geospatial stakeholders;
- (2) coordinate and guide the efficient and effective use of available federal, state, local, and public-private resources to support and further develop statewide geospatial information technology, data, and services;

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- (3) review state agency and inter-government geospatial technology, data, and services development efforts involving state or inter-government funding, including federal funding;
- (4) coordinate management of geospatial technology, data, and services between state and local governments and any collaborations;
- (5) provide coordination, leadership, and consultation to integrate government technology services with geospatial infrastructure and existing state geospatial programs;
- (6) provide guidance in order to avoid or eliminate unnecessary duplication of existing GIS technology services and systems, including services provided by other public and private organizations while building on existing Missouri infrastructures;
- (7) promote and coordinate geospatial technology training, technical guidance, and project collaborations for state and local governments.
- (8) inform and promote educational opportunities to all stakeholders as well as K-12 programs within Missouri (awareness of geography, maps, etc)

In addition to the above duties the OGI shall:

With input from the state government geospatial group (SAG) and the Missouri Chief Information Officer, the OGI shall identify when it is cost-effective for agencies to develop and use shared information and geospatial technology systems, data, and services. The OGI may require agencies to use shared information and geospatial technology systems, data, and services.

Governance

The Director-GIS shall work closely with the State CIO on geospatial technology projects, standards, and services.

An informal, internal state government geospatial group (SAG) shall provide input to the Missouri Office of Geospatial Information on issues related to the strategic direction for the State GIS program, improving state government services through the coordinated, affordable, reliable, and effective use of geospatial technology, and will help establish priorities for enterprise GIS. The membership shall represent all state government agencies and constitutional offices, including the Information Technology Services Division and the Missouri Office of Geospatial Information.

Also, in order to sustain the broader statewide purpose of the OGI program, there is a need to continue support of the Missouri GIS Advisory Council (MGISAC). This Council functions as an advisory group to the OGI. The main purpose for the Council is to support and help guide the Missouri geospatial program from a state-wide perspective. The CIO approves the appointment of members to the MGISAC. The members represent a cross-section of organizations including counties, cities, universities, business, nonprofit organizations, federal agencies, and state agencies. In addition, the Director-GIS is a standing, ex-officio, non-voting member.

Communication

The most critical element necessary for achieving Missouri's geospatial goals is effective coordination. Successful coordination implies broad-based communication and a deep understanding of the responsibilities and needs of organizations that develop, provide

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and use GIS services across Missouri. Effective communications at numerous levels are necessary to effectively provide and promote the enterprise GIS to the State of Missouri. The OGI will create a communication structure to inform decision makers about the value GIS provides the enterprise, update users on the latest technologies, data, standards, and enterprise offerings available, and promote the enterprise GIS program outside of state government. Toward this end, the OGI shall establish a single “Missouri GIS Portal” to inform and support both the public and the GIS community in the discovery, acquisition, use, and management of geographic data, information, standards, programs, and GIS services.

Relationship with other State Agencies

One of the main goals the OGI has is supporting state agencies in their use of GIS technology to improve their customer services. As such, it is imperative to build strong relationships between the OGI and the other state agencies. The OGI will work to facilitate data sharing between state agencies and to establish a set of GIS service offerings to facilitate state agencies in meeting their business needs. The Director-GIS will also act as a liaison for the state on GIS to local governments and federal agencies.

Relationship with External Organizations

The OGI will work with the Missouri Spatial Data Information Service (MSDIS), University of Missouri and other academic entities, National Geospatial-Intelligence Agency, United States Geological Survey, ESRI, and other outside agencies to continually improve the GIS environment in Missouri. The OGI, and in particular the Director-GIS, are to be the facilitator and enabler (at the state level) to assist, aid, and support local governments in their roles as data developers and direct service providers to their constituents.

Transitional Staffing Requirements

In defining short term needs for the development of the OGI, a realistic approach must be taken since both fiscal and staff resources are limited. At the onset, the OGI needs to apply resources to three areas: base map enterprise services; strategic planning; and communications. After basic services are in place, and implementations have begun, there will be a need for supplemental and subordinate resources. These staff will manage the enterprise GIS portfolio, develop and support applications, provide agency support, and maintain the core elements of the enterprise GIS. The following outlines the resource requirements in FY2011-2013 to establish the OGI and support its goals:

The primary roles or functions to be filled in OGI should address the following:

The Director-Geographic Information Systems, residing within the OGI, is responsible for strategic and tactical planning, developing, coordinating and directing project teams in geographic information system technology to support a broad spectrum of needs for business units. The position has decision-making authority and responsibilities. Supervision is exercised directly or through subordinate managers and/or supervisors over professional geographic information technology and support staff. Administrative direction

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is received from the CIO; however, the employee exercises a high degree of independent judgment and decision making in directing or assisting in the direction of the office's activities. The Director will also focus efforts on promoting the goals of the office throughout the state, at agency, local, and federal levels.

The Geospatial Database Administrator function (GDBA) provides production operational support, enterprise custodianship and development support services for OGI's database management systems and data models across development environments and platforms. Duties include design, development and support for all decision support reporting products, ETL (extract, transform and load), data mart and warehouse specialties. Focus is on data understanding, file structures and reporting access to turn OGI's eventually massive data records into useful information from which responsible business decisions can be made. This position provides logical and physical data models of the Enterprise GIS data in support of stakeholder applications, including the creation, management, administration and tuning of database structures. The GDBA ensures efficient and cost effective use of GIS database facilities for the Enterprise. This includes modeling data and performing related data impact analysis for OGI's applications as prioritized. Responsibilities include the analysis, selection, installation, maintenance and replacement of GIS data modeling software and GIS database management software. This also includes the development, implementation, and periodic review of policy, standards, guidelines, and procedures in support of GIS physical database structures, GIS data modeling, and maintaining the integrity of OGI's Enterprise data. Focus is on action and stewardship of OGI's electronic database resources, modifications and retention in all forms as a service and support offering to stakeholders. This resource provides metadata management, data extract, transformation, load and access to the OGI's data, including the specialized modeling of reporting (non-transactional) data and data warehouse operations. This includes the analysis, selection, installation, operations, maintenance and replacement of software in support of these. In addition, it is co-responsible for the data warehouse administration and implementation architecture.

The Geospatial Infrastructure Manager function will coordinate overall server support, security and usage for the Enterprise GIS resources of the OGI. This position will provide advice and counsel to the OGI on the GIS architecture and strategy on the research, planning, specification, and implementation of the OGI's infrastructure. This position will define, procure and manage the server hardware and software as well as provide technical consulting and integration with ITSD network, security and server standards. The position will configure, distribute, and install new, upgraded, or moved equipment and software. This resource participates in the review of projects proposed by the stakeholders to recommend architectural and design standards and to plan for new infrastructure needs. Additionally, the position will manage the selection, acquisition, testing, upgrade and configuration of OGI standard workstation products (PC hardware and operating system), as well as the standard software distribution technology. Develops an enterprise replacement life cycle plan, as well as GIS specific hardware and software standards and purchase requests that support OGI.

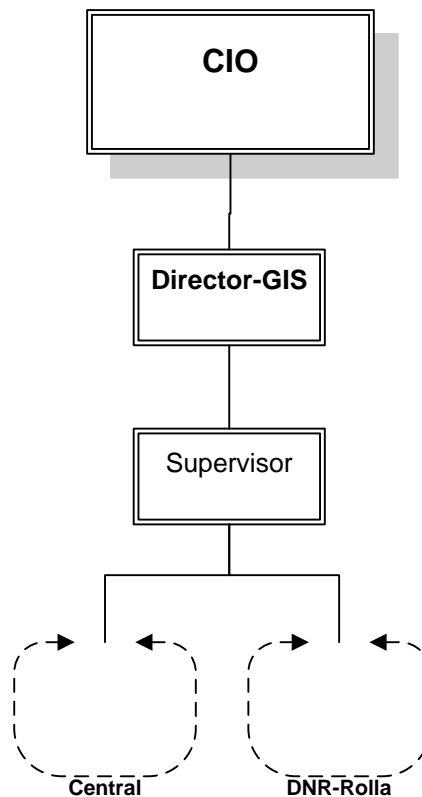
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The OGI Web Portal Manager function is responsible for coordinating all OGI web site development and maintenance. The position is also responsible for marketing the OGI programs via newsletters, publications, reports, social networks and other leading-edge communication methods. The position will establish a single “Missouri GIS Portal” to inform and support both the public and the GIS community in the discovery, acquisition, use, and management of geographic data, information, and GIS services. The position will also create a web service that can be used for customers to order existing services or customized GIS products, such as maps, reports, geographic data, publications, and other products. The position will also develop a geospatial contact listing for all entities within the state utilizing or developing data as well as linkages to any existing data portals or geospatial web services. Work in collaboration with the Missouri Spatial Data Information Service (MSDIS) to develop statewide, regional, and local “views” of geographic data created from officially recognized distributed sources. The Web Portal Manager ensures that MSDIS is able to provide the needed hosting, discovery, query, and distribution services for these data.

The GIS Project Manager function is responsible for developing and tracking progress on OGI projects and state enterprise projects including geocoding services, web services, imagery services, data development projects, data management processes, state-wide ortho-photography projects, etc. This position, working in cooperation with the Director-GIS, establishes and coordinates project management standards, reports and processes. The OGI’s application and infrastructure portfolio will be managed by this resource along with a prioritization process needed to assure that available resources are used to meet a stakeholder’s highest need first. The GIS-PM will assist in the review and evaluation of stakeholder and infrastructure proposals, and recommend resourcing actions based on this analysis. In addition, this position will assemble and manage the OGI’s inventory of applications.

GIS Staff

Current GIS resources will be consolidated enabling specialists, analysts and technicians to better interact and more easily exchange technical expertise. This provides depth to the GIS support area thus enhancing the ability to better support the agencies and departments. The consolidation will also help to reduce redundancy as solutions to user requests can more easily be exchanged. These resources will provide technical support on OGI projects, as priorities are established through managed processes. Contract staff and student internships could also be used to develop smaller ad-hoc tools, maps and analyses for specific stakeholders, as well as, large, complex applications that service the Enterprise. This will allow the OGI to meet growing GIS business needs through rapid application development, web services, multi-disciplinary cooperative ventures, cartography, and ad-hoc service operations.



Strategic Planning

Missouri's GIS Strategic Plan – *Mapping Missouri's Future* was initially developed in 2008 and was last updated in March 2011.

Staff Training

OGI staff must be adequately educated, trained and supported to facilitate the implementation of geospatial technology that will enable them to be leaders in the discipline and better perform their jobs, and ensure consistency of this multi-faceted technology utilization across the state.